

A detailed, colorful illustration of several viruses, likely coronaviruses, against a red background. The viruses are depicted with their characteristic spherical shape and numerous spike proteins protruding from their surface. The colors of the viruses range from yellow and orange to green and blue, with some showing internal structures. The background is a deep red with a subtle, glowing effect.

# **2019 INDIANA INFECTIOUS DISEASE SUMMIT**

*UNITED IN PREVENTION, RESPONSE AND SERVICE*

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# NOVEMBER 20

## 7 A.M. REGISTRATION AND BREAKFAST

## 8 A.M. OPENING SESSION (GRAND BALLROOM)

Welcome to the Indiana Infectious Disease Summit – Lee Green, Emcee

Opening Remarks – Kris Box, M.D., FACOG, Indiana State Health Commissioner

Keynote Address – Dr. Jay Butler, Centers for Disease Control and Prevention (CDC)

## 9:15 A.M. PANEL DISCUSSION: HEPATITIS A OUTBREAK RESPONSE (GRAND BALLROOM)

- Nicole Stone, MPH, Indiana State Department of Health – Hepatitis A Outbreak Overview
- Lisa Pearson, LPN, Indiana State Department of Health – Strike Team Overview and Accomplishments
- Erika Pitcher, MPH, Allen County Health Department – Allen County Prevention and Response Activities
- Brandon Halleck, Indiana State Department of Health – STD Disease Intervention Specialist's Role in a New Epidemic
- Greta Sanderson, MA, Indiana State Department of Health – Public Awareness and Media Campaign

## 11 A.M. BREAKOUT SESSIONS

### Partnerships (Veterans 1-2)

#### THE CDC'S PUBLIC HEALTH ASSOCIATE PROGRAM: TRAINING THE NEXT GENERATION OF PUBLIC HEALTH PROFESSIONALS

Nyehla Irsheid, Centers for Disease Control and Prevention

##### **Abstract:**

This session will provide a brief overview of the CDC's Public Health Associate Program (PHAP). The PHAP is designed to train early-career public health professionals who have a recent bachelor's or master's degree and an interest in public service and public health. Throughout the two-year training program, associates gain hands-on experience that will serve as a foundation for their public health careers. To give associates the experience needed to develop into public health professionals, PHAP offers a variety of public health program work assignments selected by the host site. Program areas focus on the nation's most pressing prevention and treatment priorities.

PHAP relies on its partnerships with public health agencies and tribal and nongovernmental organizations to serve as host sites for public health associates. These relationships are vital to the development of our nation's next generation of public health professionals. PHAP places early-career public health professionals in state, tribal, local, and territorial public health agencies; nongovernmental organizations such as community-based organizations, public health institutes and associations, and academic institutions; and CDC quarantine stations to gain broad experience in public health program operations.

While PHAP offers tremendous benefits to associates through training and support, the host site also receives numerous benefits, including:

- CDC-funded field assignees who bring valuable skills to host agencies and who are well-rounded, energetic, flexible, career-minded individuals with unlimited potential.
- A unique partnership with CDC to develop the nation's next generation of public health professionals.
- Access to CDC resources and subject matter expertise—CDC PHAP supervisors serve as liaisons to host site supervisors and can assist with connections to CDC materials, information, and subject matter experts.
- Online learning opportunities for host site supervisors.
- Capacity-building and human resources to fill gaps in agencies affected by budget cuts and staffing shortage.

Host sites design their associates' work assignments to meet their organization's unique needs while also providing on-the-job experience and competency development to prepare associates for future careers in public health. Associate work assignments provide skill-building activities in analytics and assessment; public health science; program planning, management, and improvement; public health policy and law; professionalism; communication; cultural competency; community dimensions of public health; and financial planning and management.

Because of the skills and experience gained through PHAP, graduates are competitive candidates for public health positions at CDC, local and state health departments, and nongovernmental organizations. Associates leave the program with the foundation for a successful, long-term public health career.

### **Key Takeaways:**

At the end of this session, participants should be able to identify a unique partnership with CDC to enhance infectious disease prevention and develop the nation's next generation of public health professionals.

### **Bio:**

Nyehla Irsheid is a first-year CDC Public Health Associate assigned to the Indiana State Department of Health (ISDH), working in the Epidemiology Resource Center. During her



time in the PHAP, Nyehla has assisted with the hepatitis A outbreak, conducting case investigations on behalf of local health department public health nurses. Nyehla graduated from Cal State L.A. with a Bachelor of Science in public health and two minors in women's studies and pan-African studies. Nyehla has a special interest in reproductive and birthing justice, specifically in communities of color.

## **HEPATITIS A OUTBREAK RESPONSE: MARION COUNTY**

Melissa McMasters, MSN, RN, Marion County Public Health Department

### **Abstract:**

**BACKGROUND:** In 2017, CDC reported outbreaks of hepatitis A virus (HAV) in several states, all involving person-to-person spread of the virus. In 2018, several of Indiana's surrounding states identified outbreaks, including Kentucky and Michigan, and new cases associated with jails were found in southern Indiana. Marion County has populations that are vulnerable to HAV based on risks associated with these outbreaks, so an incident command structure was implemented.

**METHODS:** Using mapping and data collection, areas of potential HAV spread were identified and interventions planned. Marion County's outbreak began in earnest around May 2018 with associated risks identified as male, white, ages 25-44, and injection drug users. Using interviews as a tool for gaining knowledge of risky behavior, nurse epidemiologists were able to gather information about lifestyles, comorbidities and drug use.

**RESULTS:** Of those interviewed, MCPHD identified injection and non-injection use of meth, heroin, and cocaine to be the largest risk population. Certain common comorbidities were identified as well, with the most common being hepatitis C. In addition, emergency rooms were identified as the most common place individuals sought care for their hepatitis A symptoms.

**CONCLUSIONS:** All of the information gathered on cases was used to identify those at highest risk in Marion County so that hepatitis A vaccine could be targeted to those most at risk. Injection and non-injection drug use was one of the most prevalent factors in Marion County cases, so clinics were scheduled in areas with this population. This overlapped with overall Indiana cases to include individuals experiencing homelessness and the recently incarcerated. In addition, the frequent accessing of care in emergency rooms led to the Indiana State Department of Health opening specially-funded hepatitis A vaccine to local Marion County emergency rooms.

### **Key Takeaways:**

- Understand the role of local data in an outbreak response.

### **Bio:**

Melissa McMasters works as the coordinator of the Immunization and Infectious Disease program at the Marion County Public Health Department. She has worked for

MCPHD for more than 20 years. Highlights of her career include: overseeing the reporting and investigation of various infectious diseases and leading responses to large county outbreaks of disease such as hepatitis A, Shigella, and influenza. She is a vaccine advocate and serves on the board of the Indiana Immunization Coalition.

## **STD TESTING AND TREATMENT SAVES MONEY**

Dawne DiOrio, MPH, CPH, Centers for Disease Control and Prevention

### **Abstract:**

**BACKGROUND:** It is challenging, but important, to quantify the benefit gained by conducting the traditional STD prevention activities of testing populations at risk and treating those infected and their exposed sex partners. These activities have been demonstrated to prevent transmission of STDs. All STDs are on the rise in the United States and in Indiana, so understanding how the work performed by healthcare providers and STD program staff benefits the public is valuable to stakeholders and policy-makers.

**METHODS:** Using a tool developed by CDC for STD programs to estimate the economic benefit of STD prevention and control activities, “Sexually Transmitted Infection Costs,” Indiana’s STD surveillance data reported to CDC for 2018 was analyzed to assess the direct medical and indirect costs saved as a result of STD prevention activities performed by Indiana healthcare providers and STD program staff.

**RESULTS:** As a result of healthcare provider and STD program staff efforts, in 2018 an estimated \$13 million in direct medical costs was saved due to HIV and STD cases and their sequelae prevented. An additional \$12 million is estimated to have been saved in indirect costs of these infections and their complications, primarily in lost productivity.

**CONCLUSIONS:** This economic analysis highlights the enormous benefit to the individual and to society gained as a result of STD prevention and control activities carried out by Indiana healthcare providers and STD program staff. Public dollars dedicated to STD prevention more than pay for themselves in costs averted.

### **Key Takeaways:**

- STD prevention and control must be a partnership between many individuals and institutions to be effective.
- Providing treatment to patients, and testing and treatment to their exposed partners, saves money.

### **Bio:**

Ms. DiOrio is a public health advisor with the National Center for HIV/AIDS, Viral Hepatitis, STD, and TB Prevention (NCHHSTP) within the Centers for Disease Control and Prevention. She is currently assigned as technical advisor to the STD Program at the Indiana State Department of Health. She has been a manager of public health programs for state and local governments since 1989, beginning as the STD program director and

HIV counseling and testing coordinator for the state of Maine. After earning her master's degree in public affairs from Indiana University School of Public and Environmental Affairs (SPEA) in Bloomington, she joined CDC where she has had field assignments with the state of New Jersey, the city of Chicago, and the Marion County, Indiana, health departments. Ms. DiOrio is board certified in public health and has been an adjunct instructor at Indiana University since 2010, teaching public health courses in SPEA and the School of Public Health.

## Probable Transfusion-Associated Transmission of Powassan Virus, 2018 (Veterans 3)

Taryn Stevens, Lindsay Taylor, Pallavi Annambhotla, Eric Destrampe, Carolyn Gould, Jamel Groves, Robert Lanciotti, Jeanette McGavic, Rebecca Osborn, Susan Stramer, John Weiss, E. Ann Misch, Jennifer A. Brown

### **Abstract:**

**BACKGROUND:** Powassan virus (POWV) is a tick-borne flavivirus and rare cause of encephalitis. In the U.S., POWV disease is most commonly reported from the Northeast and Upper Midwest; no cases have been reported in Indiana. Transmission of POWV via blood transfusion or organ transplantation has not been documented. We investigated a case of encephalitis in an Indiana resident with recent history of kidney transplantation and red blood cell transfusions.

**METHODS:** Medical records of the encephalitis patient, organ donor, and recipient of a lung from the same donor were reviewed. The encephalitis patient and blood donors were interviewed. Specimens from the encephalitis patient, lung recipient, organ donor, and blood donors were tested for evidence of POWV infection by reverse transcription-polymerase chain reaction (RT-PCR), IgM capture enzyme-linked immunosorbent assay, microsphere-based immunoassay, and/or plaque reduction neutralization test. An environmental investigation was conducted to assess the encephalitis patient's risk of tick exposure.

**RESULTS:** The patient had onset of encephalitis in July 2018 and was hospitalized but recovered. The patient had received a kidney transplant approximately three weeks prior to encephalitis onset and three red blood cell units during the five days following transplant. Serum and CSF collected 13 days after encephalitis onset had detectable POWV IgM antibodies but no detectable RNA. The POWV neutralizing antibody titer was 10 in this serum specimen and 320 in a serum specimen collected five days later. Serologic testing for other flaviviruses was negative. The patient's pre-transplant serum had no detectable POWV RNA, IgM, or neutralizing antibodies. Post-transplant serum from the lung recipient had no detectable POWV IgM or neutralizing antibodies. Banked organ donor serum had no detectable POWV RNA, IgM, or neutralizing antibodies. A plasma co-component from one blood donor had no detectable POWV IgM or neutralizing antibodies, but RT-PCR testing was equivocal. A serum specimen collected from this donor 175 days after donation had detectable POWV IgM and neutralizing antibodies (titer: 40). The blood donor lived in the Upper Midwest and reported a tick bite one month prior to donation. Follow-up sera from the other two blood donors had no detectable



POWV neutralizing antibodies. The encephalitis patient's only reported outdoor exposure was in Indiana, at home and a park; no ticks were found at either location.

**CONCLUSIONS:** Blood transfusion was the likely mechanism of POWV transmission in this case. While POWV disease is rare, healthcare providers should consider POWV to be a possible transfusion-associated pathogen.

**Key Takeaways:**

- Healthcare providers should consider Powassan virus to be a possible transfusion-associated pathogen.
- Transfusion-associated cases of Powassan virus can occur in areas where tick-borne transmission is absent.

**Bio:**

Jen Brown, DVM, MPH, is the Indiana State Public Health Veterinarian. Dr. Brown has 12 years of public health experience at state, local, and federal agencies and three years of clinical experience at a small animal hospital. She is board certified by the American College of Veterinary Preventive Medicine and an active member of the National Association of State Public Health Veterinarians. Her interests include zoonotic and vector-borne diseases, emerging infectious diseases, animal-related injuries and the human-animal bond.

## Ebola Virus Disease (Veterans 4-5)

Erin Swartz, MPH, Indiana State Department of Health

**Abstract:**

This presentation outlines the process of monitoring Ebola in Indiana. The presentation addresses the characteristics of Ebola including symptoms, transmission, vaccines and treatment, where it came from, and other historical information. From the time a traveler arrives in Indiana until that person is confirmed Ebola-free, many entities are involved in the monitoring process. Each traveler is screened at U.S. airports when entering from an Ebola-affected area. The Indiana State Department of Health (ISDH) is notified when a traveler arrives in Indiana and reaches out to the local health department. Monitoring begins within 24 hours and lasts 21 days. If the traveler begins showing symptoms during the monitoring period, ISDH arranges transport to the nearest assessment hospital.

**Key Takeaways:**

- Although progress is being made in the treatment and prevention of Ebola Virus Disease, it is still a rare and serious disease.
- Many entities play a role in the monitoring process when travelers return from Ebola-affected areas.

**Bio:**

Erin Swartz, MPH, is the healthcare-associated infections epidemiologist with the Indiana State Department of Health. She has a passion for public health and is dedicated to improving the

quality of life of people in the community. Erin has been working in the public health sector since 2014 with state and non-profit entities. She received her Master of Public Health degree with a concentration in epidemiology from the Fairbanks School of Public Health in 2018.

## NOON LUNCH (LIBERTY HALL)

### 1:15 P.M. BREAKOUT SESSIONS

#### **Risk to Hospitals during a Community Hepatitis A Outbreak: Flipping the Perspective (Veterans 1-2)**

Amy Beth Kressel, MD, MS, FIDSA, FSHEA, Indiana University School of Medicine and Eskenazi Health

##### **Abstract:**

**BACKGROUND:** In November 2017, a nationwide hepatitis A (HAV) outbreak arrived in Indiana. CDC does not recommend hepatitis A vaccine (HAVx) for healthcare workers (HCWs). In February 2019, Eskenazi Health (EH) identified a HCW with HAV who had potentially exposed patients.

**METHODS:** 1. EMR tracer report to determine if any of the HCW's patients had HAV (incubation period) or were potentially exposed (infectious period). 2. EMR and CHIRP review of potentially exposed patients to determine HAV immunity +/- HAVx. 3. Communication with potentially exposed patients. 4. Communication with public health partners. 5. Investigation for other potential exposures. 6. Communication with employees regarding HAVx. 7. Internal communication and coordination.

**RESULTS:** 1. The HCW had not provided care for a patient with diagnosed HAV during the incubation period. The HCW had provided care for 14 patients during the infectious period. 2. No potentially exposed patient had evidence of HAV immunity or HAVx in EMR or CHIRP. 3. EH initiated communication to all 14 patients or their delegates regarding the potential exposure, symptoms of HAV, testing, and HAVx. 4. Only 1/14 patients was tested for HAV; the result was negative. 13/14 patients did not develop HAV. 5. The HCW did not share community food at work. 6. HAVx dispensed at the EH Pharmacy increased after communication about availability: December 2018 - February 2019 = 4 HAVx dispensed; March - May 2019 = 82 HAVx dispensed.

**CONCLUSIONS:** Traditionally, hospitals view infection risk in terms of HCWs acquiring infections from or spreading infections between patients. Viewed this way, the Indiana HAV community outbreak, while serious for the community, did not appear to be a threat to the hospital: HAV acquisition in hospitals has been rare, which is supported by our results. However, this episode demonstrates that the traditional view needs to be flipped: HCWs can bring community-acquired HAV into the hospital. Nudges can quickly increase HAVx uptake in HCWs.

### Key Takeaways:

- Community outbreaks can introduce risk of hospital-acquired infections via infected healthcare workers. In the case of vaccine-preventable diseases, HCW vaccination can reduce institutional and patient risk.
- Education and nudges are part of the toolbox to increase vaccination and can often be implemented prior to a formal policy.

### Bio:

Amy Beth Kressel, MD, MS, FIDSA, FSHEA, is a professor of clinical medicine in the Division of Infectious Diseases at the Indiana University School of Medicine (IUSM).

Dr. Kressel's work combines infectious disease expertise with hospital leadership and system change. As medical director of infection prevention and antimicrobial stewardship at Eskenazi Health, she leads programs that protect patients by reducing their risk of harm when hospitalized. She also consults at ABK Consulting, LLC.

Dr. Kressel serves or has served as an appointed member of the SHEA/CDC Outbreak Response Training Program Advisory Panel, the Indiana State Department of Health Antibiotic Resistance Advisory Committee, the Indianapolis Coalition for Patient Safety MDRO Workgroup and Influenza Workgroup, the SHEA Research Network, the IDSA Clinical Affairs Committee, and the IDSA ID Services Valuation Workgroup.

## Partnering to Prevent Congenital Syphilis (Veterans 3)

Dawne DiOrio, MPH, CPH, Centers for Disease Control and Prevention

### Abstract:

**BACKGROUND:** Congenital syphilis (CS) occurs when a pregnant woman with syphilis is not diagnosed or treated and the infection is passed in utero, causing severe infant morbidity and mortality. Congenital syphilis is easily prevented if pregnant women receive timely and adequate screening and treatment for syphilis. Maternal social vulnerability also affects Indiana cases. In the U.S. and in Indiana, the number of women with syphilis and the number of CS births have been steadily increasing. During 2016 and 2017, Indiana reported 51 pregnant women with syphilis and 13 congenital syphilis cases to CDC. This study assesses the proportion of CS cases successfully prevented by health care and public health efforts and classifies each CS birth as to its potential for having been successfully prevented with proper intervention.

**METHODS:** Using Indiana's Sexually Transmitted Disease (STD) Program surveillance database, the number of pregnant women with syphilis and the number of CS cases reported between 2016 and 2017 were obtained. Next, we applied the congenital syphilis prevention cascade described in Kidd, *et al*, to assess the extent of CS cases prevented in a jurisdiction. Then we examined the case investigation records for CS case babies and associated mothers to categorize each reported CS case by whether it could have been prevented by the healthcare system, using the method described in Rahman, *et al*.

**RESULTS:** The U.S. average for CS cases averted is estimated at 75%. In Indiana, 75% of CS cases were averted during 2016-17 due to correct medical management and public health case follow-up. Differences are noted in cases averted by STD district in Indiana with a range from 53% to 100% of cases averted. The unique socioeconomic factors affecting Indiana's CS cases will also be discussed. The 13 CS cases are classified as: high potential for prevention by prenatal providers (1); possibly preventable by prenatal providers (1); and unlikely preventable by prenatal providers (11).

**CONCLUSIONS:** Congenital syphilis is completely preventable but requires the involvement of the health care and public health systems acting in partnership. A CS birth is greatly influenced by social vulnerability of the mother.

**Key Takeaways:**

- Congenital syphilis is completely preventable when women are screened for syphilis and treated, if positive, per recommendations.
- Many women have life circumstances that make it difficult for them to take action to prevent syphilis while pregnant or to prevent passing it to the fetus.

**Bio:**

Ms. DiOrio is a public health advisor with the National Center for HIV/AIDS, Viral Hepatitis, STD, and TB Prevention (NCHHSTP) within the Centers for Disease Control and Prevention currently assigned as technical advisor to the STD Program at the Indiana State Department of Health. She has been a manager of public health programs for state and local governments since 1989, beginning as the STD Program Director and HIV Counseling and Testing Coordinator for the state of Maine. After earning her master's degree in public affairs from Indiana University School of Public and Environmental Affairs (SPEA) in Bloomington, she joined CDC where she has had field assignments with the state of New Jersey, the city of Chicago, and the Marion County, Indiana health departments. Ms. DiOrio is board certified in public health and has been an adjunct instructor at Indiana University since 2010, teaching public health courses in SPEA and the School of Public Health.

## **Conflict De-escalation and Resolution (Veterans 4-5)**

Terri Bogue and Robert Bogue, Thor Projects, LLC

**Abstract:**

**BACKGROUND:** While conflict is something we all must deal with, there are times when the conflict is critical. In critical conflicts, emotions run high and getting to a solution is not possible. In infectious disease control, de-escalating and resolving conflict is crucial to the safety and outcome of patients and staff alike. In this workshop, we will deliver the tools you need to first de-escalate conflict, then build understanding, and finally create solutions. You will learn why we need to address emotions first – whether they are grounded in reality or not.

**METHODS:** You will learn how to identify the real causes for conflict. You will learn and practice proven techniques for tearing apart conflict into its constituent components, so you can

address them one by one. Once the real cause is exposed, you will learn to decide whether you still disagree or whether you can see the other person's perspective. Finally, you will create workable solutions and work together to select the right one. Most solutions offered up too quickly are win-lose solutions. You will learn how to get past this to offer up win-win solutions to even difficult situations.

**RESULTS:** Working with emotions means acknowledging the other person's emotional state and recognizing when your emotions begin to escalate and what you can do to remain professionally detached even when the other person seems to be intentionally trying to get a reaction from you. Whether you are a party to the conflict, a moderator, or an observer, you will learn how to make the conflict better and more effective for driving the right outcomes rather than hurt feelings and defensive positioning.

**CONCLUSIONS:** The complex, high-stress, and emotionally laden environment of healthcare frequently leads to conflict. Conflicts are based on a difference in perspectives or values. Examining perspectives and values exposes the real cause of the conflict. Patient safety and quality care are dependent on collaborative relationships and effective communication. In infectious disease control, it is crucial to learn to address conflict by identifying the conditions that create conflict, the causes that trigger it, and techniques to resolve it.

**Key Takeaways:**

- Demonstrate techniques for understanding the root problem in a conflict.
- Identify methods to de-escalate conflict.
- Synthesize win-win solutions to problems that lead to conflict.

**Bios:**

Terri Bogue has a passion for helping people be healthy and happy, both physically and emotionally. As a clinical nurse specialist with more than 30 years of experience in nursing, she understands how difficult healthcare and life are for patients and providers. Through this experience, she has developed tools that support healthcare providers in delivering effective and compassionate care to their patients and themselves and reducing healthcare-associated infections. As an author, Terri engages and encourages her audiences and has spoken at local, regional, and national events. She inspires people to learn what boundaries are and how to maintain them, both professionally and personally; cool down a conflict during heated situations; and prevent and recover from burnout. When she is not working, she spends her leisure time resolving conflicts and improving communication patterns in her own home among her seven children and enjoying moments of peace and quiet with her husband, Rob.

Robert Bogue has a driving passion for delivering solutions through both teaching and learning. His drive for resolving problems is fueled by his creativity and innovation – by his ability to find solutions that others cannot find. A business owner and community leader for over 10 years, he has authored 27 books and edited over 100 additional books. He knows how to ignite engagement, stop from burning out, and freeze a snowballing conflict in its tracks. Robert is an engaging presenter who speaks at local, regional, national, and international events. As a 16-

time Microsoft MVP and recovering technologist, he has spoken to tens of thousands of professionals in a wide range of audiences. Professionally taught as a comedian, Robert joins his ability to focus others with just a little bit of humor to create a wonderful experience for his audiences. He is committed to making the complicated simple with a flair that is both engaging and inspiring.

## 2:15 P.M. BREAK/NETWORKING

## 2:30 P.M. BREAKOUT SESSIONS

### Cases of *Neisseria gonorrhoeae* with High-Level Azithromycin Resistance Detected in Indiana, Strengthening U.S. Response to Resistant Gonorrhea (SURRG), 2017-2018 (Veterans 1-2)

Jamie Black, MPH, Indiana State Department of Health

Justin Holderman, MPH, Centers for Disease Control and Prevention

#### **Abstract:**

**BACKGROUND:** National surveillance data show gonorrhea azithromycin (AZI) resistance has been increasing in the U.S. but high-level azithromycin-resistance (HL AZI-R) remains rare. Several HL AZI-R gonorrhea cases have been identified in Indiana. This study describes a cluster of HL AZI-R gonorrhea cases, including the epidemiology of cases with low-level azithromycin resistance versus HL AZI-R, outcomes from the public health response through Partner Services, and social network mapping of cases and their sexual contacts.

**METHODS:** Indiana — through participation in the national surveillance system Gonococcal Isolate Surveillance Project (GISP), and Strengthening U.S. Response to Resistant Gonorrhea (SURRG), a Centers for Disease Control and Prevention (CDC)-supported multisite program to bolster local capacity to rapidly detect and respond to gonorrhea with reduced antibiotic susceptibility — collected genital and extra-genital samples from men and women attending a sexually transmitted disease (STD) clinic and two non-STD clinics for gonorrhea culturing. Local antimicrobial susceptibility testing (AST) via Etest was performed on all 872 gonorrhea isolates collected from May 2017 to September 2018 (an estimated 12% of total morbidity in the jurisdiction). Reduced AZI susceptibility was defined as MICs  $\geq 2.0 \mu\text{g/mL}$ ; HL AZI-R was defined as MICs  $\geq 256 \mu\text{g/mL}$ . Disease intervention specialists (DISs) conducted investigations on all patients with reduced susceptibility of any level and offered testing and treatment to partners.

**RESULTS:** Of the 872 isolates, 61 (7.0%) demonstrated reduced AZI susceptibility, of which 14 (1.6%) demonstrated HL AZI-R (11 urethral, two pharyngeal, one rectal). All isolates were susceptible to ceftriaxone (MIC  $\leq 0.125 \mu\text{g/mL}$ ) and were adequately treated with ceftriaxone 250mg and azithromycin 1g. The 14 HL AZI-R isolates were obtained from 12 men, two with both urethral and pharyngeal infections. Of the 12 men, nine were white, nine were men who have sex with men/bisexual, and six reported anonymous partners. Nine patients completed a



test-of-cure; all were negative. The 12 men claimed 36 sex partners during the two months prior to infection. DIS elicited enough information to initiate 12 partners for follow-up, and five tested positive for gonorrhea. Only two cases were epidemiologically linked.

**CONCLUSIONS:** During a 17 month period, Indiana identified 12 men with HL AZI-R gonorrhea in Indiana. The continued detection of these infections and lack of epidemiological-linkage between the patients and their partners suggest sustained local transmission. Intensified surveillance, expanded AST, and elicitation of local sexual networks may provide future opportunities to curtail local spread of this concerning strain.

**Key Takeaways:**

- A unique strain of *Neisseria gonorrhoeae* with high-level resistance was identified in Indiana.
- Indiana is prepared and actively responding to this cluster through enhanced field investigations and continued partnerships with healthcare and community partners.

**Bios:**

Jamie Black is a Hoosier native who began her career in public health working with both not-for-profit organizations and local government agencies in disaster preparedness and epidemiology. She completed her MPH in epidemiology at SUNY Downstate School of Public Health in Brooklyn, NY, and soon after joined Indiana's Strengthening the U.S. Response to Resistant Gonorrhea (SURRG) team at the Indiana State Department of Health as the project's Epidemiology Coordinator. The SURRG program builds local capacity to expand gonorrhea culture collection and antimicrobial susceptibility testing in partnership with community partners. Through innovative DIS investigations, molecular testing, and social network analysis, SURRG aims to expand knowledge on antibiotic-resistant gonorrhea and disease transmission dynamics. She also holds a B.S. in genetic biology from Purdue University, with a minor in anthropology.

Justin Holderman comes from the frontlines of public health beginning as a disease intervention specialist focused on contact tracing and community screening. After completing his MPH in epidemiology, he began providing technical assistance as a CDC epidemiologist for the expanded surveillance project: Strengthening U.S. Response to Resistant Gonorrhea (SURRG). The SURRG program builds capacity at the local level to expand gonorrhea culture collection and antimicrobial susceptibility testing in partnership with community partners. Through innovative DIS investigations, molecular sequencing, and social network analysis, SURRG aims to expand knowledge on antibiotic-resistant gonorrhea and disease transmission dynamics.

## Infectious Disease Medley (Veterans 3)

### DIALYSIS SUCCESS STORY, STATE DEPARTMENT OF HEALTH JOURNEY

Jennifer K. Spivey, MSN, RN, CNOR, CIC, FAPIC, Indiana State Department of Health

**Abstract:**

**BACKGROUND:** With the Centers for Disease Control and Prevention (CDC) 2018 funding, the Indiana State Department of Health (ISDH) hired an infection preventionist (IP) in the Epidemiology Resource Center's (ERC's) Healthcare-Associated Infection and Antimicrobial Resistant (HAI-AR) division to do infection prevention and control assessments (ICARs) within hemodialysis free-standing outpatient facilities across the state.

**METHODS:** This IP selected the top 36 highest bloodstream standard infection ratios (SIRs) from 2018 and performed onsite infection control assessments. Indiana became a committed partner of the Making Dialysis Safer for Patients Coalition, sharing CDC materials and resources to improve practices. Each facility received a bound dialysis booklet containing resources and best practice guidance along with onsite education on gaps noted from the ICAR. This session will review the gaps and data along with action plans shared to improve practice.

**RESULTS:** The areas of improvement noted across this sample of 36 sites were opportunities in compliance with aseptic technique policies for catheter insertion and care, including scrub times, taping practices, and cross-contamination of catheter site. In addition, environmental cleaning of the dialysis chairs, beds, and machines was observed to not meet policy standards. In addition, there was an overarching need for patient hand hygiene education and practice after holding AV-Fistula sites and during the course of treatment. Most all the sites had contracted services for environmental cleaning but did not monitor or audit these services that happen after hours.

**CONCLUSION:** Infection prevention assessment and education is valuable from the ISDH for proactive oversight of proper infection prevention practice in dialysis facilities. Auditing should continue intermittently for facilities with high bloodstream SIRs to improve patient outcomes.

**Key Takeaways:**

- Discuss the role of the infection preventionist in state department of health dialysis infection control risk assessments.
- Communicate infection prevention practice gaps that contribute to increased bloodstream infection rates in dialysis patients.
- Describe best practices and education strategies to improve and make dialysis care safer.

**Bio:**

Jennifer K. Spivey, MSN, RN, CNOR, CIC, FAPIC, is a graduate of the University of Indianapolis' Masters in Nursing Education program and is an independent infection prevention (IP) consultant. Jennifer has been board certified in infection prevention (CIC) and perioperative nursing (CNOR) for more than 30 years. She was awarded APIC's highest honor of Fellow of APIC (FAPIC) in 2016 in the inaugural class.

Jennifer is a well-known expert in infection prevention in Indiana. She is the past president of APIC Indiana, a two-term board of director member, and currently serves as the Chair of the Mentoring Taskforce for APIC. She is passionate about infection prevention and loves to teach in all domains, from novice to expert level, across the continuum of care. She holds consulting contracts with ISDH as the only infection preventionist for the ERC in the HAI-AR division. She consults in both hospitals and long-term care regarding infection outbreaks across Indiana. She is a proficient national speaker and has presented at APIC, AACN, and NTI National Conferences from 2011 to 2018. Her special interests include improving hand hygiene; using Toyota Kata process improvement models to reduce HAIs; and infection preventionist education and training in dialysis, behavioral health, and long-term care.

## INVESTIGATION OF A COMMUNITY-BASED CLUSTER OF INVASIVE SEROGROUP C *NEISSERIA MENINGITIDIS*, INDIANA 2018-2019

Lauren Milroy, MPH, Indiana State Department of Health

Julie Mueller, RN, Vanderburgh County Health Department

### **Abstract:**

**BACKGROUND:** *Neisseria meningitidis* serogroup C (NmC) is a common cause of community-based outbreaks of invasive meningococcal disease (IMD) in the United States. Between December 2018 and January 2019, the Indiana State Department of Health (ISDH) was notified of three cases of invasive NmC among residents of the same Indiana city, prompting an investigation of a potential community-based outbreak of IMD.

**METHODS:** The local county health department and ISDH reviewed medical records and interviewed case-patients or family members to collect data on patient demographics, clinical presentation, close contacts, social activities, risk factors, and organizational affiliations. Isolate identification was confirmed via MALDI-TOF MS, and isolate serogroups were determined by slide agglutination and polymerase chain reaction (PCR). Genomic sequencing was conducted for all isolates to determine sequence type (ST), clonal complex (CC), and outer membrane protein types (PorA, FetA, and PorB).

**RESULTS:** ISDH confirmed three cases of invasive NmC in the same city of residence with illness onset dates from December 26, 2018 to January 4, 2019, resulting in an incidence rate approximately 15 times the city's average IMD incidence rate in 2013-2017 (2.52 versus 0.17 per 100,000 population, respectively). Two cases presented with meningitis, and one presented with bacteremia only. One patient died as a result of the infection. No common organizational affiliations, risk factors, contacts, or epidemiologic links were identified among the cases. Molecular typing profiles for isolates from two patients were identical (ST-12671, unassigned CC), while the third isolate was more distantly related (ST-2006, CC103). Twenty-four of 25 close contacts (96%) and 46 of 48 healthcare worker contacts (96%) received antimicrobial chemoprophylaxis. Targeted communications were distributed to local healthcare providers to encourage prompt testing, treatment, and reporting of suspected IMD cases. Further actions such as mass

vaccination or expanded chemoprophylaxis were not undertaken due to the lack of a well-defined population at risk.

**CONCLUSIONS:** Although isolates from only two of the three identified NmC cases were genetically closely related, incidence of NmC within the community was elevated compared to prior years. In the absence of well-defined risk groups, feasibility of control measures beyond chemoprophylaxis of close contacts was limited. Ongoing surveillance is necessary to promptly identify additional cases and re-evaluate recommended control measures as needed.

**Key Takeaways:**

- Thorough epidemiologic investigation and laboratory characterization of isolates are crucial to assessing the occurrence of potential meningococcal disease outbreaks and determination of appropriate control measures.
- Strong partnerships between ISDH, the local health department, and laboratory partners facilitated prompt and thorough investigation of this recent cluster of NmC.

**Bio:**

Lauren Milroy serves as a vaccine-preventable disease epidemiologist at the Indiana State Department of Health where she oversees surveillance and investigation of vaccine-preventable and invasive bacterial diseases. She also previously served as the tobacco epidemiologist for ISDH. Lauren completed her master of public health degree in epidemiology from the University of Minnesota School of Public Health. Prior to joining ISDH, she served as a Population Health Service Fellow through the University of Wisconsin – Madison.

## **Eradicating Burnout in Your Office (Veterans 4-5)**

Terri Bogue and Robert Bogue, Thor Projects, LLC

**Abstract:**

**BACKGROUND:** It is estimated that burnout affects 30 - 50% of healthcare providers at any time. Too often, burnout is considered a personal problem; however, in healthcare, burnout affects the entire system. Burnout has significant impact in healthcare, including reduced quality patient care, patient and staff safety, patient satisfaction, and increased staff turnover. There is also a statistically significant correlation between nurse burnout and increased healthcare-associated infections. Burnout, while a personal problem, is also a system problem that impacts staff, patients, and profits. In infectious disease control, learning how to prevent and recover from burnout can change your practice.

**METHODS:** You'll learn a set of models for how burnout works. Everyone in healthcare is experiencing increased demands on their time, resources, and energy; this, combined with systems not designed to support the expanding daily work, has resulted in epidemic levels of burnout. Burnout among healthcare professionals has claimed over 50% of physicians and 30%

of nurses. While the evidence demonstrates that burnout is becoming a norm in healthcare, it is rarely discussed.

**RESULTS:** In healthcare, burnout affects not only you, but also your peers. This impact then spreads to patient outcomes, staff engagement, and even safety. In this interactive session, you'll learn the drivers that cause burnout. You'll learn how burnout sneaks up on us and techniques to escape its clutches – without adding to the heavy workload healthcare staff already bear. You'll learn simple techniques to make yourself and those around you more resilient to burnout.

**CONCLUSIONS:** Traditional models for burnout have been focused on assessment and fault-finding. However, these approaches don't allow you to develop a culture that is burnout resistant and helps everyone recover should burnout take hold. With models taught in this session, you'll be able to identify the causal chains that lead to burnout and what you need to do to break them.

**Key Takeaways:**

- Understand burnout and its causes.
- Apply knowledge of burnout to reduce occurrence in you.
- Apply knowledge of burnout to reduce occurrence in your organization.

**Bios:**

Terri Bogue has a passion for helping people be healthy and happy, both physically and emotionally. As a clinical nurse specialist with more than 30 years of experience in nursing, she understands how difficult healthcare and life are for patients and providers. Through this experience, she has developed tools that support healthcare providers in delivering effective and compassionate care to their patients and themselves and reducing healthcare-associated infections. As an author, Terri engages and encourages her audiences and has spoken at local, regional, and national events. She inspires people to learn what boundaries are and how to maintain them, both professionally and personally; cool down a conflict during heated situations; and prevent and recover from burnout. When she is not working, she spends her leisure time resolving conflicts and improving communication patterns in her own home among her seven children and enjoying moments of peace and quiet with her husband, Rob.

Robert Bogue has a driving passion for delivering solutions through both teaching and learning. His drive for resolving problems is fueled by his creativity and innovation – by his ability to find solutions that others cannot find. A business owner and community leader for over 10 years, he has authored 27 books and edited over 100 additional books. He knows how to ignite engagement, stop from burning out, and freeze a snowballing conflict in its tracks. Robert is an engaging presenter who speaks at local, regional, national, and international events. As a 16-time Microsoft MVP and recovering technologist, he has spoken to tens of thousands of professionals in a wide range of audiences. Professionally taught as a comedian, Robert joins his ability to focus others with just a little bit of humor to create a wonderful experience for his audiences. He is committed to making the complicated simple with a flair that is both engaging and inspiring.

3:30 P.M. BREAK/NETWORKING

## 4 P.M. PANEL DISCUSSION: PARTNERSHIPS AND SOCIAL DETERMINANTS OF INFECTIOUS DISEASE (GRAND BALLROOM)

### **Small Town/Big Problems: Recovering from an HIV Outbreak**

Brittany Combs, RN, Scott County Health Department

#### **Key Takeaways:**

- How lack of testing and healthcare exacerbated the spread of HIV and hepatitis C.
- How you must go to the people in need/meet them where they are.

#### **Bio:**

Brittany Combs, RN, BSN, serves as Director of Public Health Nursing for the Scott County Health Department. Ms. Combs received her Bachelor of Science in nursing from Indiana University Southeast in New Albany. She received her certificate in public health from School of Public Health at University at Albany. Ms. Combs's previous work includes working at Floyd Memorial Hospital in the Progressive Care Unit. She has worked in public health the past 11 years. Since then, she has assisted with the H1N1 epidemic, a local tornado disaster, the HIV outbreak, and hepatitis A outbreak. She resides in Scottsburg, IN, with her husband, Estill, and two children, Lilah, age 9 years, and Eli, age 11 years old. She lives on a small farm with two dogs, one cat, two horses, and seven chickens.

### **Connections to Care: How Barriers to HIV Care Affect People and Communities**

Dr. Christina Ludema, PhD, Indiana University – Bloomington

#### **Bio:**

Dr. Ludema's research and training have focused on social and structural contributors to sexually transmitted disease outcomes and causal inference methodology. She has been involved in the Women's Interagency HIV Study (WIHS), a large prospective cohort of HIV-infected and -uninfected women in the U.S. since 2013. Her current research interests include women's health, health insurance policy, food insecurity, transportation, and HIV control and comorbidities.



## **Using emergency department visits, deaths, and social vulnerability to target ZIP codes for pneumonia vaccination for 65 years old and older, 2011 – 2019, Marion County, IN**

Brittany Yarnell, MPH and Melissa Titus, MPH, Marion County Public Health Department

### **Key Takeaways:**

- Pneumonia vaccinations available, return rates, and recommendations
- Pairing data with social vulnerability to determine areas for interventions

### **Bios:**

Brittany Yarnell is a syndromic surveillance epidemiologist at the Marion County Public Health Department and is interested in all aspects of public health. She researched an array of issues from food poisoning to influenza by using surveillance tools, such as emergency department notes, to quickly assess areas that need immediate attention from public health. She studied at Bowling Green State University and The Ohio State University, where she received her MPH with an epidemiology concentration.

Melissa Titus is the Marion County Public Health Department's infectious disease epidemiologist and is so passionate about the field that she once volunteered to be infected with chancroid. She is planning chief for the hepatitis A outbreak in Marion County and has also been involved with responses to syphilis, mumps, and hepatitis C. She studied history at University of Southern Mississippi and epidemiology at Indiana University Fairbanks, where she ranks among the oldest to ever receive her MPH.

## **5 P.M. QUIZ BOWL**

# NOVEMBER 21

8 A.M. REGISTRATION AND BREAKFAST

8:30 A.M. PANEL DISCUSSION: INFECTIOUS DISEASE  
EPIDEMIOLOGY AND OUTBREAK RESPONSE  
(GRAND BALLROOM)

## **Whole Genome Sequencing (WGS): Epi and Lab Working Together for Outbreak Identification**

Nicole Stone, MPH, Enteric Epidemiologist, Indiana State Department of Health

Jamie Yeadon, Laboratory Supervisor, Enteric Microbiology, Parasitology, and Molecular Subtyping Laboratory, Indiana State Department of Health

### **Bios:**

Nicole Stone is a 2016 Master of Public Health graduate from the Indiana University Fairbanks School of Public Health where she majored in epidemiology. Nicole has been working in public health for six years, first at the Marion County Public Health Department and now at the Indiana State Department of Health. She is an Enteric Disease Epidemiologist, working with all foodborne, waterborne, and zoonotic conditions that cause gastroenteritis.

Jamie Yeadon currently serves as the Laboratory Supervisor for Enterics, Parasitology, and Molecular Subtyping at ISDH. Jamie received her Bachelor's degree in biology from Franklin College and is currently pursuing her Master's degree in bioinformatics and biotechnology from the University of Maryland Global Campus. She has worked for ISDH Laboratories since 2008 starting in the Virology/BT laboratory before taking on the supervisor role for Enterics.

## **MRSA in the NICU**

Kelly Jolliff, BA, CIC, Infection Prevention Manager, South Bend Memorial Hospital

### **Key Takeaways:**

- Benefit of surveillance methodologies including genotyping in recognition of an outbreak.
- Importance of multidepartment collaboration and unit-level engagement during an outbreak response.

**Bio:**

Kelly Jolliff, BA, CIC, is the Manager of Infection Prevention for Beacon Health System, which includes oversight of programs at four hospitals in Northern Indiana. Ms. Jolliff received her Bachelor's of Arts degree from the University of Notre Dame with a double major in psychology and sociology and is board certified in infection prevention and control. She has worked as an Infection Preventionist for the past 10 years. Prior to this role she worked for the local public health department in epidemiology and emergency preparedness roles for five years. She has assisted with a variety of disease investigations throughout her career. Ms. Jolliff is a resident of South Bend, IN, and is proud to work with a phenomenal infection prevention team.

**Infection Prevention and Ebola in Kenya**

Kristen Kelley, MPH, CIC, CLC, Director of Infection Prevention and Control, IU Health Academic Center

**Key Takeaways:**

- How infection prevention and Ebola response occurs in one tertiary medical center in Kenya.
- Challenges and opportunities for infection prevention in low-income settings.

**Bio:**

Kristen Kelley, MPH, RN, CIC, CLC, FAPIC, currently serves as the Director of Infection Prevention for the IU Health Adult Academic Medical Center in downtown Indianapolis. Ms. Kelley received her bachelor of science in nursing from Marian University and her masters of public health from Indiana University. She is a Fellow of Association for Professions in Infection Control (APIC) and certified in infection prevention. She has overseen a 68% improvement in patient harm events in her role. She has a passion for improved hospital safety both in the U.S. and in Kenya, where she has traveled twice with future trips planned. She is originally from Boston, MA, and lives in Carmel, IN, with her husband and three boys.

**Eastern Equine Encephalitis (EEE) Surveillance and Response**

Lee Green, Vector-borne Epidemiologist/Medical Entomologist, Indiana State Department of Health

**Key Takeaways:**

- Importance of state and local communication.
- Importance of timely response.

**Bio:**

Lee Green has been a Vector-borne Epidemiologist/Medical Entomologist with the Indiana State Department of Health since 2006 where he serves as a subject matter expert in Northern Indiana. He is a board member of the Indiana Pesticide Review

board, Indiana Vector Control Association, and Indiana Environmental Health Association. He is an active member of the Indiana Environmental Health Response Team and is the 2019 IEHA Environmental Health Specialist of the Year. He currently resides in Converse, IN, with his wife and two sons on a grain and beef cattle farm.

### **Ebola from a State Perspective**

Erin Swartz, MPH, Healthcare-associated Infections Epidemiologist, Indiana State Department of Health

#### **Key Takeaways:**

- Although progress is being made in the treatment and prevention of Ebola virus disease, it is still a rare and serious disease.
- Many entities play a role in the monitoring process when travelers return from Ebola affected areas.

#### **Bio:**

Erin Swartz, MPH, is the healthcare-associated infections epidemiologist with the Indiana State Department of Health. She has a passion for public health and is dedicated to improving the quality of life of people in the community. Erin has been working in the public health sector since 2014 with state and not-for-profit entities. She received her Master of Public Health degree with a concentration in epidemiology from the Fairbanks School of Public Health in 2018.

### **Influenza Outbreak that Wasn't**

Angie Kitashoji, BSN, RN, CIC, Marion General Hospital

## **10 A.M. BREAKOUT SESSIONS**

### **An Introduction to Whole Genome Sequencing and Its Application to Enteric Outbreak Investigations (Veterans 1-2)**

Nicole Stone, MPH and Jamie Yeadon, Indiana State Department of Health

#### **Abstract:**

**BACKGROUND:** Each organism (bacteria, virus, and animal) is made up of DNA that has a unique sequence of bases (A, T, C, and G). Whole genome sequencing (WGS) is a laboratory procedure that determines the order of bases in the genome of an organism in one process. Determining the sequence of these bases allows the identification of the unique DNA fingerprint of that organism, which can be matched to other organisms that share the same fingerprint or DNA. This, in turn, allows public health laboratory, epidemiology, and environmental partners to analyze DNA from clinical and environmental specimens that are collected across time and location and identify specimens that are linked based on their DNA. This allows public health officials to identify individual patients, food items, and sources of contamination based on

those specimens that match by their DNA during outbreak investigations.  
(<https://www.cdc.gov/pulsenet/pathogens/wgs.html>)

**METHODS:** PulseNet is a national laboratory network that investigates bacterial isolates from sick people, contaminated food, and the places where food is produced. This resource compares the DNA fingerprint of bacteria to find clusters of disease that might represent unrecognized outbreaks. Once an outbreak or cluster is identified, all clinical or environmental isolates are included by sharing a certain amount of matching DNA. The goals of outbreak investigations at the Indiana State Department of Health (ISDH) are to stop current outbreaks as soon as possible by implementing effective control measures and to prevent similar outbreaks in the future. Whole genome sequencing (WGS) can be used for both of these goals by identifying individuals associated with the outbreak, the environmental source of the outbreak, and a possible contamination site. The process for outbreak investigations include verifying the diagnosis, identifying any cases associated with the outbreak, creating a case definition, generating a hypothesis, testing that hypothesis, and implementing control measures.

**RESULTS:** WGS provides the ISDH and other state and national health officials a starting point for an outbreak investigation and acts as conclusive evidence of human, food, and environmental isolates that match at the DNA-level. The investigating agencies can then move forward with epidemiologic studies and environmental trace backs. Any additional clinical or environmental samples that are collected for the outbreak can then be added in or removed based on how similar their DNA is to the known outbreak sequence. Since WGS is a new process for outbreak investigations, there is a significant delay in these results. Until protocols are improved, the ISDH will continue to rely on serotyping and PFGE as the frontline for outbreak investigations at the local level.

**CONCLUSIONS:** The ISDH laboratory, epidemiology, and environmental partners utilize WGS largely for multistate outbreaks led by the CDC; however, the use of WGS for local investigations continues to increase. The CDC relies on state and local partners to identify patients, collect and test clinical and environmental isolates, and conduct interviews and trace-back investigations. WGS can provide a DNA-level connection between patients, food or environmental sources, and the setting of origin or contamination. Outside of the Enteric Teams, additional groups in the Epidemiology Resource Center utilize WGS or who will likely use it in the future to identify and track outbreaks.

**Key Takeaways:**

- Understanding the basics of whole genome sequencing and its application in public health.
- How WGS is changing the way we look at foodborne illness.
- How ISDH uses the new technologies for enteric investigations.

**Bios:**

Nicole Stone is a 2016 Master of Public Health graduate from the Indiana University Fairbanks School of Public Health where she majored in epidemiology. Nicole has been working in public

health for six years, first at the Marion County Public Health Department and now at the Indiana State Department of Health. She is an Enteric Disease Epidemiologist, working with all foodborne, waterborne, and zoonotic conditions that cause gastroenteritis.

Jamie Yeadon currently serves as the Laboratory Supervisor for Enterics, Parasitology, and Molecular Subtyping at ISDH. Jamie received her Bachelor's degree in biology from Franklin College and is currently pursuing her Master's degree in bioinformatics and biotechnology from the University of Maryland Global Campus. She has worked for ISDH Laboratories since 2008 starting in the Virology/BT laboratory before taking on the supervisor role for Enterics.

## Implementing Inpatient Visitor Restrictions during Non-pandemic Influenza Seasons in Marion County (Veterans 3)

Brittany Yarnell, MPH, Marion County Public Health Department

Melissa McMasters, MSN, RN, Marion County Public Health Department

Amy Voris, BSN, RN, Marion County Public Health Department

### **Abstract:**

**BACKGROUND:** In the United States, monitoring for influenza (flu) starts in late September/early October and continues through the end of May. The 2018/2019 flu season had two peaks, totaling 15 weeks above baseline in Marion County emergency departments (EDs), making it the longest season in the past nine non-pandemic years. The 2017/2018 season was the deadliest, with 336 deaths in Indiana. During deadly and prolonged flu seasons, the Marion County Public Health Department (MCPHD) and Indiana Patient Safety Coalition (IPSC) work together to recommend when visitor restrictions for Marion County hospitals should be implemented.

**METHODS:** The MCPHD monitors Marion County EDs for Influenza-like Illness (ILI) symptoms (fever with cough or sore throat, or patient says "flu" or "influenza") on a weekly basis until we are above baseline (2% of visits) for ILI visits. At this point, daily monitoring starts and internal meetings between epidemiologist, MCPHD nurse epidemiologists, emergency preparedness, and public relations occurs when we reach 2.5% of visits, or if the weekly percent increase is  $\geq 1\%$ . Local and national trends and laboratory results are considered when determining if ED visits for flu is likely to increase. If so, MCPHD reaches out to Managed Emergency Surge for Healthcare (MESH) and IPSC for an update and the recommendation for visitor restrictions starts when ILI reaches  $\geq 3.5\%$  of weekly ED visits or if we see more deaths than expected.

**RESULTS:** In late December 2019, Marion County EDs reached 2.5% of ILI visits, with those 0-4 years old most affected. News reports and lab testing pointed towards Respiratory Syncytial Virus (RSV), and Riley Hospital's visitor restrictions started January 2, 2019. The remaining hospitals went on visitor restriction by January 11, 2019, and the first wave of respiratory illness started to die down mid-January in Marion County. During this time, southern states were starting to see a sharp rise in ILI again. Expecting the second wave, Marion County visitor restrictions were in place when the stronger second wave arrived and remained until April 15, 2019.



**CONCLUSIONS:** Monitoring national and local trends is necessary to determine when to implement hospital visitor restrictions. Implementing them too soon can be a hardship on the patients and hospital staff, but too late could mean exposing vulnerable patients to this potentially fatal virus. It is important for public health and hospitals to communicate information during the flu season to determine when visitor restrictions should be in place.

**Key Takeaways:**

- Understand ILI trends and triggers during influenza season.
- Identify additional factors that may contribute to recommending city-wide visitor restrictions.

**Bios:**

Brittany Yarnell is a syndromic surveillance epidemiologist at the Marion County Health Department, and is interested in all aspects of public health. She has spent time researching an array of issues from food poisoning to influenza by using surveillance tools, such as emergency department notes, to quickly assess areas that need immediate attention from public health. She studied at Bowling Green State University and The Ohio State University, where she received her MPH with an epidemiology concentration.

Melissa McMasters works as the coordinator of the Immunization and Infectious Disease program at the Marion County Public Health Department. She has worked for MCPHD for more than 20 years. Highlights of her career include: overseeing the reporting and investigation of various infectious diseases and leading responses to large county outbreaks of disease such as hepatitis A, Shigella, and influenza. She is a vaccine advocate and serves on the board of the Indiana Immunization Coalition.

Amy Voris works as a public health nurse epidemiologist in the Infectious Disease program at Marion County Public Health Department. As a nurse epidemiologist, Amy routinely conducts infectious disease surveillance and completes case investigations of reportable conditions, specifically emerging infectious diseases and vector-borne illnesses. After stumbling into public health eight years ago, Amy has found her niche in promoting the health of her community. Special interests include emergency preparedness and response (planning for the worst but hoping for the best) and waiting for “the next big thing.”

## Understanding the Infectious Disease Outbreak Response Process (Veterans 4-5)

**Abstract:**

Infectious disease outbreaks pose significant public health challenges, often resulting in substantial morbidity, mortality, and individual and societal costs. Furthermore, outbreak response can vary considerably depending on the outbreak etiology and transmission patterns. Responding to infectious disease outbreaks therefore requires a coordinated response, often involving epidemiology, laboratory, environmental health, healthcare, and other partners. This session will describe the Indiana State Department of Health’s overall outbreak response

process and will highlight unique aspects of outbreak investigation and control for enteric, healthcare-associated, tuberculosis, vector-borne, and vaccine-preventable disease outbreaks.

### **Key Takeaways:**

Following the session, attendees will be able to:

- Describe the general public health response process for infectious disease outbreaks.
- Discuss how outbreak investigation and control measures vary based on etiology.

## **11 A.M. BREAK/NETWORKING**

## **11:15 A.M. BREAKOUT SESSIONS**

### **Amish Pertussis Outbreak and Education (Veterans 1-2)**

Lindsay Joy-Wenning, MPH, Indiana State Department of Health

#### **Abstract:**

**BACKGROUND:** In March 2017, one infant in an Amish community in Indiana passed away due to pertussis. The Parke County Health Department and District 7 (D7) Field Epidemiologist responded to an interest in education to improve protective coverage on April 5, 2017. A pertussis outbreak was discovered to be taking place, which instigated several vaccination clinics led by the state and local health departments on April 11 and 18.

**METHODS:** The Centers for Disease and Control (CDC) case criteria was used for pertussis. The Indiana State Department of Health's (ISDH's) patient interview form was utilized to collect demographics, symptoms, and risk factors. The D7 Field Epidemiologist provided educational training in the form of drawn pictures and vaccine ingredient handouts from the Children's Hospital of Philadelphia. The vaccine clinics were advertised via news broadcast on April 6. Three separate clinics took place; one on April 11 at the Coyote school house in Judson, and two at the Ferndale and Secluded Acres school houses near Rockville on April 18. Vaccinations were given by public health nurses from Parke, Vigo, Clay, and Putnam counties, as well as, the mobile medical bus nurses of Valley Health Professionals in Vermillion County. Measles, mumps, rubella (MMR); diphtheria, tetanus, pertussis (DTaP); and tetanus, diphtheria, pertussis (Tdap) vaccines were offered.

**RESULTS:** Seven cases were investigated by the District 7 Epidemiologist. 100% of the patients were linked to the index case by attendance in church. Forty-six total patients were vaccinated with 33 MMR (72%), six DTaP (13%), and 19 Tdap (41%). In Judson, 64% of those vaccinated were children.

**CONCLUSION:** There was a lack of scientific education in the community. MMR was more widely accepted due to the lifetime immunity it provided from measles and rubella, which are common. There was concern regarding the rapidity with which the pertussis vaccine waned. Since most of the community had been infected with whooping cough within recent years, they

did not see the point of a vaccine when their own immunity from past infection is longer-lasting. No one in the community had received any type of vaccinations in the past and antibiotic treatment had not been administered for this outbreak, but they were not averse to vaccines. Health communication and outreach are essential to build this positive relationship and create a dialogue regarding misinformed biological information. Encouraging relationships were observed since 63% of the counties in District 7 participated in these voluntary clinics.

#### **Key Takeaways:**

- Listener will be able to understand how a difficult population was educated and vaccinated.
- Listener will learn skills to improve stakeholder relationships and enhance intra-county communication.

#### **Bio:**

Lindsay Joy-Wenning is a field epidemiologist for the Indiana State Department of Health. She is responsible for investigating infectious disease occurrences associated with her eight counties in District 7. Lindsay graduated from IU Fairbanks School of Public Health with an MPH in epidemiology in 2015. During her studies, she interned in hospital infection control in Indianapolis and was a Public Health Practice Scholar for the National Association of County and City Health Officials (NACCHO). She currently resides in Bloomington with her husband and son.

## **Enterics (Veterans 3)**

### **UNDERSTANDING BARRIERS TO CONDUCTING SEXUAL HISTORY INTERVIEWS DURING ENTERIC DISEASE INVESTIGATIONS**

Hailey Vest, Indiana State Department of Health

#### **Abstract:**

Though many pathogens known to cause diarrheal illness are transmitted through contaminated food or water or through animal contact, some pathogens can be transmitted through sexual activity. These pathogens include *Shigella*, *Cryptosporidium*, *Giardia*, and hepatitis A. The ISDH ERC identified gaps in the availability of sexual history information in enteric disease case investigations. To better understand barriers to obtaining that information, a survey was disseminated to local health departments in Indiana to assess knowledge about enteric disease transmission through sexual contact as well as potential obstacles. This information will inform future trainings and resources developed by the ISDH ERC to assist with sexual history interviews.

#### **Key Takeaways:**

- Because some enteric pathogens that cause diarrheal illness can be transmitted through sexual activity, it is important to obtain a comprehensive exposure history that includes the number and gender of sexual partners.
- Additional resources, especially those that can address patient discomfort during interviews, are needed to reduce barriers to obtaining a sexual history.

**Bio:**

Hailey Vest is an Enteric Epidemiologist within the Epidemiology Resource Center at the Indiana State Department of Health. She graduated from the University of North Carolina – Chapel Hill with a Bachelor of Science in biology and is pursuing a Master's Degree in public health at the Richard M. Fairbanks School of Public Health. Hailey has also previously worked as an enteric public health investigator within the ISDH ERC. Prior to joining ISDH in 2017, she taught high school science in Indianapolis.

**UTILIZING A GRADUATE STUDENT INVESTIGATION TEAM TO ASSIST LOCAL HEALTH DEPARTMENTS IN INDIANA WITH ROUTINE AND OUTBREAK CASE INVESTIGATIONS**

Kori Waelbroeck, MPH (c), BSPH, Indiana State Department of Health

**Abstract:**

**BACKGROUND:** The Indiana University – Student Epidemiology Response Team (IU-SERT) was founded in 2015 by the Indiana State Department of Health (ISDH) and the Indiana University Fairbanks School of Public Health as a resource for local health departments (LHDs) to reduce the burden of disease investigations. IU-SERT is a team of graduate student interns who assist participating LHDs with investigations for reportable enteric diseases, including salmonellosis and Shiga-toxin producing *E. coli* (STEC). As of 2018, over half of Indiana counties were enrolled in IU-SERT. If there are outbreaks related to these conditions, IU-SERT assists counties in completing supplemental questionnaires requested by the state or CDC. This research compares case investigations completed by IU-SERT to those completed by LHDs.

**METHODS:** A cross-sectional study was conducted with bivariate analyses to examine the difference in case investigation completeness and timeliness between IU-SERT and non-IU-SERT counties for investigations of salmonellosis and STEC, as well as how many investigations were completed by IU-SERT versus LHDs.

**RESULTS:** A total of 3,600 probable or confirmed salmonellosis and STEC case investigations were completed from 2015 to 2018 and used for analysis. In this four-year period, IU-SERT completed 1,210 (33.6%) case investigations. The average time from the first notification received to when the investigation was submitted for IU-SERT counties was significantly less than for non-IU-SERT counties (two-sample  $t = 2.93$ ,  $p = 0.0034$ ). IU-SERT investigations were more likely to be closed as “Unable to Contact” when compared to investigations done by LHDs, while investigations done by LHDs were more likely to be closed as “Not Investigated”.

**CONCLUSION:** The IU-SERT program assisted LHDs with one-third of all salmonellosis and STEC case investigations in Indiana from 2015 to 2018. Case investigations conducted by IU-SERT were completed significantly faster than those conducted by LHDs. Timeliness of contacting patients and completing case investigation is especially important when cases are part of a cluster or outbreak. The earlier a patient can be

contacted after illness onset, the better their exposure recall will be. Patient responses may help identify the source of exposure and prevent others from getting sick. IU-SERT was created as an ISDH assistance program to reduce the burden of high-volume condition investigations on LHDs in Indiana. This program provides students with hands-on public health experience and allows LHDs to dedicate more of their time to other responsibilities outside of reportable condition case investigations.

#### **Key Takeaways:**

- In 2015, IU-SERT was created as an ISDH assistance program to reduce the burden of high-volume condition investigations on local health departments in Indiana, and over half of Indiana counties participate in IU-SERT.
- Because IU-SERT dedicates the majority of their time to completing routine case investigations for salmonellosis and Shiga toxin-producing *E. coli*, they are able to complete these investigations faster than LHDs.

#### **Bio:**

IU-SERT was founded in 2015 to reduce the burden of disease investigations on local health departments (LHDs). IU-SERT is a graduate student intern team who conduct case investigations for salmonellosis, Shiga-toxin producing *E. coli* (STEC), and listeriosis. This program was created through a partnership between the IUPUI Richard M. Fairbanks School of Public Health and the Indiana State Department of Health. Recently, program leaders created a fellow position for the IU-SERT program, who is in charge of training new interns and evaluating IU-SERT capacity and response. Kori Waelbroeck is the current IU-SERT Fellow and an MPH candidate at the Fairbanks School of Public Health.

### ***CRONOBACTER SAKAZAKII* MENINGITIS IN A FULL-TERM NEONATE FED EXCLUSIVELY WITH BREAST MILK — INDIANA, 2018**

Nicole Stone, MPH, and Laurie Kidwell, Indiana State Department of Health

#### **Abstract:**

In 2018, the Indiana State Department of Health (ISDH) investigated a case of *Cronobacter sakazakii* meningitis in a neonate who had been fed exclusively with breast milk. At 8 days of age, the infant was admitted with poor feeding, fever, and abnormal movements. Cultures from blood and CSF yielded *C. sakazakii*, and the patient was treated with antibiotics and for seizures. An epidemiological investigation found that from birth until onset, the infant was fed exclusively maternal breast milk, both at the breast and expressed. Breast milk was expressed using a personal electric breast pump and was not combined with any additives such as fortifier or infant formula. ISDH, in partnership with clinicians from the hospital and CDC, conducted an investigation to identify the source of infection. In addition, kitchen environmental surfaces were sampled using sponges that were submitted for testing. *C. sakazakii* was isolated from expressed breast milk samples; the breast pump kit; and samples obtained from the sink, drain, and drying area next to the sink. Pulsed field gel electrophoresis (PFGE) was

performed on all *C. sakazakii* isolates using the PulseNet Cronobacter protocol. Environmental isolates were indistinguishable or differed by one band by PFGE from the clinical isolate.

**Key Takeaways:**

- Understand the epidemiology of *C. sakazakii*.
- Understand a unique epidemiological and environmental health investigation for a low-morbidity illness.
- Understand recommendations for proper breast milk and pump handling and cleaning.

**Bio:**

Nicole Stone is a 2016 Master of Public Health graduate from the Indiana University Fairbanks School of Public Health where she majored in epidemiology. Nicole has been working in public health for six years, first at the Marion County Public Health Department and now at the Indiana State Department of Health. She is an Enteric Disease Epidemiologist, working with all foodborne, waterborne, and zoonotic conditions that cause gastroenteritis.

## Correctional Health IS Community Health (Veterans 4-5)

Deborah Nichols, ISDH, Viral Hepatitis/Harm Reduction Program Director

John Cocco, Step-Up, Inc., Director of Re-Entry Services

Abby Abram, Step-Up, Inc., INPEP ECHO Project Coordinator

Andrea Janota, Richard M. Fairbanks School of Public Health, ECHO Program Coordinator

Erika Chapman, ISDH, Harm Reduction Program Manager

**Abstract:**

The Project ECHO Indiana Peer Education Project (INPEP) creates a unique opportunity for people who are incarcerated to provide health education to their peers. The goal of the program is to educate the incarcerated population on infectious disease (i.e. viral hepatitis, HIV, and STDs), as well as harm reduction, to reduce transmission and improve health. Additionally, the ECHO model allows peer educators to develop leadership skills; build communication strategies; learn to work collaboratively with a multidisciplinary team; and provide services not only to the incarcerated population, but also to their own families and communities upon re-entry. This session will serve to give attendees an example of the Indiana Peer Education Program as well as give participants an opportunity to ask questions of the peers themselves through teleECHO zoom technology.

**Key Takeaways:**

- Understand the value and importance of peer-delivered health education among people who are incarcerated.
- Reduce the stigma associated with people who are incarcerated, substance use, and harm reduction.



- Examine personal bias toward the health of people who are incarcerated.

## 12:15 P.M. LUNCH (LIBERTY HALL)

## 1:30 P.M. PANEL DISCUSSION: VACCINE-PREVENTABLE DISEASES (GRAND BALLROOM)

### **Overview of Measles & Mumps Testing at the ISDH Laboratory**

Brian Pope, BA, Virology Supervisor, Indiana State Department of Health Laboratory

#### **Bio:**

Brian is a supervisor at the ISDH Laboratory covering virology and the biothreat suite. He has worked at the ISDH Lab since 2014. He received his BA in biology from IUPUI and is a member of the Pan American Society for Clinical Virology (PASCV) and the American Society for Microbiology (ASM).

### **Amish Pertussis Outbreak and Education**

Lindsay Joy-Wenning, BA, MPH, Field Epidemiologist, Indiana State Department of Health

#### **Bio:**

Lindsay Joy-Wenning is a Field Epidemiologist for the Indiana State Department of Health. She is responsible for investigating infectious disease occurrences associated with her eight counties in District 7. Lindsay graduated from IU Fairbanks School of Public Health with an MPH in Epidemiology in 2015. During her studies, she interned in hospital infection control in Indianapolis and was a Public Health Practice Scholar for the National Association of County and City Health Officials (NACCHO). She currently resides in Bloomington with her husband and son.

### **Mumps Outbreaks at IU-Bloomington: Lessons Learned**

Beth Conrad Rupp, MD, Medical Director and Physician, Indiana University Health Center

#### **Bio:**

Dr. Rupp has been the medical director at IU Health Center (IUHC), the student health center for IU-Bloomington campus, since Aug. 1, 2018. She has worked as a staff physician at the IUHC since August 2006. Dr. Rupp previously worked at Washington State University Health and Wellness from 2004 to 2006. She graduated from IU School of Medicine in 2001 and completed her residency at MAHEC Family Medicine program in Asheville, NC, in 2004. Dr. Rupp is board certified in family medicine. She has been married for 20 years and has two teenage daughters.

### **Seasonal Respiratory Restrictions: Technology, Timing, & Teamwork**

Adam Karcz, MPH, CPH, CIC, Director of Infection Prevention, Riley Hospital for Children – Indiana University Health

**Bio:**

Adam Karcz is the director of infection prevention at Riley Hospital for Children at Indiana University Health. Adam began his career in infection prevention in 2009 at Children's Healthcare of Atlanta as an epidemiologist and served as the hospital liaison to the CDC Epidemic Intelligence Service during 2009 H1N1 influenza. In 2013, Adam joined Riley Hospital for Children as an infection preventionist, moving into the director role in 2013. Adam's areas of interest include vaccine-preventable diseases, hospital construction, central line-associated bloodstream infections (CLABSIs), and emergency preparedness. Adam completed his Bachelor of Science degree at Eastern Illinois University and his Master of Public Health at Indiana University. He is nationally certified in Infection Control (CIC) and Public Health CPH. In his spare time, Adam enjoys fishing, CrossFit, woodworking, and hunting. He lives in Indianapolis with his wife, Charity, and two dogs, Louis and Kona.

## 2:45 P.M. BREAKOUT SESSIONS

### Vaccine-preventable Disease Control in the Era of the Anti-Vaccination Movement (Veterans 1-2)

Jill King, Immunizations Deputy Director, Indiana State Department of Health

Payton Revolt, MPH, Vaccine-Preventable Disease Epidemiologist, Indiana State Department of Health

**Abstract:**

Immunizations have led to a drastic decrease in rates of vaccine-preventable diseases; however, there is still concern over the safety of vaccines and the necessity of several in a short time. The impact of vaccine hesitancy and refusal can lead to an increase in vaccine-preventable diseases, such as the measles virus that was eliminated in the United States in 2000. Media platforms have influenced the spread of vaccine hesitancy and vaccine misinformation. Due to vaccine hesitancy and the misconception of vaccines, the threat of the hard achievements of reducing the burden of infectious diseases is now resurfacing.

**Key Takeaways:**

- WHO has identified vaccine hesitancy as one of its top 10 threats to global health in 2019.
- Healthcare workers remain a trusted advisor and influencer of vaccine decisions.
- Vaccination is one of the most cost-effective ways of avoiding diseases.

**Bios:**

Jill King is the Deputy Director of the Immunization Division at the Indiana State Department of Health. She has been with the Immunization Division for 12 years and has managed the Vaccine Spend Plan for 10 years. In her role, she manages all vaccine ordering and usage for the State of Indiana Vaccines for Children Program and the Adult Vaccine Program. In addition, Jill takes the

lead on all outbreaks and ensures that vaccine is made available to all entities in the event of an outbreak. Jill attended Indiana University Purdue University at Indianapolis where she earned a Bachelor's degree in social work (BSW).

Payton Revolt is a vaccine-preventable disease epidemiologist in the Infectious Disease Epidemiology Resource Center at the Indiana State Department of Health (ISDH). In this role, she acts as the coordinator for investigations of vaccine-preventable disease cases and outbreaks. Prior to her time at ISDH, she worked in Ghana as a Public Health Intern where she implemented programs to identify health concerns in communities and to create awareness of communicable and non-communicable diseases. Payton attended the University of Indianapolis where she earned her Bachelor's degree in science and Master of Public Health.

## **Acute Flaccid Myelitis (AFM) Surveillance, 2014-2019 (Veterans 3)**

Lauren Milroy, MPH, Indiana State Department of Health

### **Abstract:**

Acute flaccid myelitis (AFM) is a rare but serious neurologic condition characterized by sudden onset of limb weakness and loss of muscle tone. Impairment ranges from mild to severe, with some patients experiencing paralysis and requiring ventilator support. The Centers for Disease Control and Prevention (CDC) and state and local health departments have conducted surveillance for AFM since 2014, when an increase in cases, primarily among children, was first noted. Between August 2014 and October 2019, 590 confirmed cases of AFM were identified nationwide, with biennial peaks in incidence occurring in even years, primarily during summer and fall months. Although a viral etiology is suspected, no single cause of AFM has been consistently identified, and long-term outcomes for patients with AFM remain unknown. This presentation will focus on AFM epidemiology, current research into causes of AFM, the AFM surveillance process, and recommendations for clinicians treating patients with suspected AFM.

### **Key Takeaways:**

- AFM remains a rare but serious condition, and multiple investigations are ongoing to understand more about the causes and outcomes of AFM.
- Timely case reporting and specimen submission is critical to enhancing understanding of AFM.

### **Bio:**

Lauren Milroy serves as a vaccine-preventable disease epidemiologist at the Indiana State Department of Health where she oversees surveillance and investigation of vaccine-preventable and invasive bacterial diseases. She also previously served as the tobacco epidemiologist for ISDH. Lauren completed her master of public health degree in epidemiology from the University of Minnesota School of Public Health. Prior to joining ISDH, she served as a Population Health Service Fellow through the University of Wisconsin – Madison.

## G07471: The TB Strain That Keeps On Giving (Veterans 4-5)

Kelly White, MPH, CPH, Indiana State Department of Health

### **Abstract:**

A brief review of the epidemiology, clinical, and social factors associated with TB strain G07471, a pervasive and ongoing strain of pansensitive Tuberculosis in Indiana, dating back to 2015.

### **Key Takeaways:**

- Describe the epidemiology and basic risk factors associated with TB strain G07471 in Indiana.
- Highlight the uniqueness of TB investigations and understand future implications of past actions.

### **Bio:**

Kelly White is the director of TB/Refugee Health and the TB controller for the Indiana State Department of Health (ISDH). She has been active in state service since 2012, joining ISDH in 2015. She is a graduate of Purdue University and the University of Louisville and holds a Master's in Public Health. She has been a participant on several national TB working groups and enjoys educating school children on science and infectious disease through the Skype a Scientist program. She and her husband are northern breed enthusiasts and have two Siberian Huskies, Apollo and Oberon.

4 P.M. CLOSING SESSION (GRAND BALLROOM)